

IN THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) Arrangement for generating ultrashort laser pulses comprising: with

a solid-state laser oscillator ~~for providing a pulse sequence and ;~~

a ~~downstream~~ multistage laser amplifier ~~for increasing the pulse energy of pulses that are selected by ; and~~

at least one circuit element for selecting pulses from the pulse sequence with a reduced pulse repetition rate compared to the pulse sequence,

~~whereby~~ said laser amplifier has having no resonator and ~~[[is]] being~~ free of active circuit elements with respect to the pulse to be amplified and ~~has~~ having at least one double pass of the pulse to be amplified, ~~characterized in that~~

wherein ~~one~~ a small-signal amplification of more than 10 is provided for each amplifier stage in an amplifying laser crystal ~~(12--17)~~, ~~whereby~~ the total small-signal amplification caused by all amplifying laser crystals ~~[[is]] being~~ greater than 100.

2. (Currently Amended) Arrangement in accordance with claim 1,
~~characterized in that~~ said laser amplifier ~~(2)~~ as comprising a laser-active element
[[is]] and being arranged in a resonator that is effective for a second wavelength
(λ_2) other than a first wavelength (λ_1) ~~provided for further use of the pulse to be~~
amplified or for a second polarization component that is oriented orthogonal to
said a first polarization component of the pulse ~~provided for further use.~~
3. (Currently Amended) Arrangement in accordance with claim 2,
~~characterized in that~~ further comprising two dichroitic beam splitters ~~(37, 38)~~
are adjacent to said laser amplifier ~~(2)~~ and two resonator mirrors are, said
beam splitters being embodied transmitting for said first wavelength (λ_1) or for
said first polarization component of said pulse to be amplified and highly
reflecting for said second wavelength (λ_2) or said second polarization
component, ~~whereby~~ said second wavelength (λ_2) or said second polarization
component are being directed by said beam splitters ~~(37, 38)~~ to the two
resonator ~~mirror~~ mirrors ~~(39, 40)~~, ~~of which one~~ [[is]] being highly reflecting for
said second wavelength (λ_2) or said second polarization component and the
other being adapted for decoupling ~~decouples~~ said second wavelength (λ_2) or
said second polarization component.

4. (Currently Amended) Arrangement in accordance with any of claims 1 through 3, ~~characterized in that~~ wherein said circuit element ~~[[is]]~~ comprises an acoustooptical modulator ~~(3)~~ that and is arranged between said solid-state laser oscillator ~~[[1]]~~ and said amplifier ~~input of said laser amplifier (2)~~.

5. (Currently Amended) Arrangement in accordance with claim 4, ~~characterized in that~~ wherein said acoustooptical modulator ~~[[3]]~~ is triggered by a photodiode that determines the selection of the pulses in conjunction with an electronic counter.

6. (Currently Amended) Arrangement in accordance with any of claims 1 through 3, ~~characterized in that~~ further comprising two acoustooptical modulators ~~(35, 36)~~ ~~[[are]]~~ arranged as circuit elements one after the other between said solid-state laser oscillator ~~(1)~~ and said amplifier ~~input of said laser amplifier (2)~~.

7. (Currently Amended) Arrangement in accordance with claim 1, ~~characterized in that~~ wherein the pulse repetition rate is variable by adjusting the pulses to be selected in a time unit.

8. (Currently Amended) Arrangement in accordance with any of claims 1 through 3, ~~characterized in that~~ wherein said circuit element ~~[[is]]~~ comprises an electrooptical modulator ~~that~~ and is arranged between said solid-state laser oscillator (1) and ~~the amplifier input of said~~ said laser amplifier (2).

9. (Currently Amended) Arrangement in accordance with any of claims 4 through ~~8~~ 1 through 3, ~~characterized in that~~ wherein said circuit element is ~~additionally provided as~~ comprises an optical isolator between said solid-state laser oscillator (1) and said laser amplifier (2) ~~for avoiding interference from said laser amplifier (2) in said solid-state laser oscillator (1).~~

10. (Currently Amended) Arrangement in accordance with any of claims 1 through 3, ~~characterized in that~~ further comprising a Faraday isolator ~~(19, 44)~~ is arranged between said solid-state laser oscillator (1) and said laser amplifier (2) ~~for avoiding interference from said laser amplifier (2) in said solid-state laser oscillator (1).~~

11. (Currently Amended) Arrangement in accordance with any of claims 1 through ~~[[10]]~~ 3, ~~characterized in that~~ wherein said solid-state laser oscillator (1)

is diode-pumped and mode-coupled.

12. (Currently Amended) Arrangement in accordance with any of claims 1 through [[10]] 3, ~~characterized in that~~ wherein said solid-state laser oscillator ~~(1)~~ ~~is embodied as~~ comprises a Q-switched, highly-repetitive pulsed oscillator.

13. (Currently Amended) Arrangement in accordance with any of claims 1 through [[10]] 3, ~~characterized in that~~ wherein said solid-state laser oscillator ~~(1)~~ ~~is embodied as~~ comprises a passive Q-switched oscillator.

14. (Currently Amended) Arrangement in accordance with any of claims 1 through [[10]] 3, ~~characterized in that~~ wherein said solid-state laser oscillator ~~(1)~~ ~~is embodied as~~ comprises a microchip laser.

15. (Currently Amended) Arrangement in accordance with any of claims 1 through [[10]] 3, ~~characterized in that~~ wherein said solid-state laser oscillator ~~(1)~~ ~~is embodied as~~ comprises a pulsed diode laser.

16. (Currently Amended) Arrangement in accordance with any of claims 1 through [[15]] 3, ~~characterized in that~~ further comprising a polarizer (43) and a lambda quarter plate (42) or a Faraday isolator [[are]] arranged downstream of said laser amplifier (2) ~~for avoiding interference from an application in the solid-state laser oscillator (1).~~

17. (Currently Amended) Arrangement in accordance with any of claims 1 through [[16]] 3, ~~characterized in that~~ further comprising at least one non-linear optical crystal for wavelength transformation [[is]] arranged downstream of said laser amplifier (2) ~~for generating ultrashort laser pulses in the UV range.~~

18. (Original) Method for generating ultrashort laser pulses by selecting pulses with reduced pulse repetition rates from a primary pulse sequence and by amplifying the selected pulses with a multistage laser amplifier that has no resonator with respect to the pulse to be amplified and from which the amplified pulses are decoupled free of active switching procedures, whereby the amplification is connected to no more than one double pass by amplifying media provided in the amplifier stages and whereby the selected pulses in each amplifier stage are amplified with small-signal amplification of more than 10,

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but at least however with total small-signal amplification of more than 100.